S/133/61/000/002/002/014
A054/A033

Heat Insulation of the Dozzle Metal of 8-15 Ton Slabs

this respect can still be obtained by structural changes of the dozzle. Thus, by applying a double-layer lining (115 mm thick foam chamotte and 40 mm thick chamotte brick layer), about 2.5-4% of the metal can be saved by the localization of the shrinkage holes in the risers. The saving amounted to 10.8 rubles/ton for bridge steel, 11.1 rubles/ton for carbon steel and 12.3 rubles /ton for boiler steel (1960 currency). There are 6 figures and 2 tables.

ASSOCIATION: Zhdanovskiy metallurgicheskiy institut (Zhdanovsk Metallurgical Institute) and zavod im.Il'icha (Plant im.Il'ich)

Card 5/10

STRAKHOV, V.G., kand. tekhn. nauk; KAZACHKOV, Ye.A., kand. tekhn. nauk; SKOBLO, S.Ya., kand. tekhn. nauk; SERDYUKOV, G.V., inzh.

Studying the technology of manufacturing low-alloy steel for forging ingots. Met. i gornorud. prom. no.1:21-23 Ja-F '62. (MIRA 16:6)
(Steel ingots)

SKOBLO, S.I. [Skoblo, S.Ya.]; KAZACHKOV, E.A. [Kazachkov, Ye.A.]; STRAKHOV, V.G. [Strakhov, V.G.]; KIRIUSIN, I.I. [Kiryusin, Yu.I.]; SAPELKIN, N.F.

Studies on the kinetics of the solidification process in the axial part of the ingot through the method of differentiated soundings. Analele metalurgie 16 no.4:39-43 O-D '62.

S/148/62/000/003/002/011
E071/E435

18.7120

AUTHORS: Skoblo, S.Ya., Kazachkov, Ye.A., Strakhov, V.G., Kiryushin, Yu.I., Sapelkin, N.F.

TITLE: A study of the kinetics of the process of solidification of the axial part of an ingot by the method of differential probing

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.3, 1962, 53-59

TEXT: A method of probing of ingots during their solidification and some results on the kinetics of solidification of ingots of the most prevailing shape (wide-side up with a relatively small ratio of the height to mean cross-section) are described. After a brief survey of the usual methods of investigation of the process of solidification of ingots (emptying after a given solidification time, additions of radioactive element at given time intervals during the solidification process, probing with a rod) the authors consider that neither method by itself gives sufficient information on the solidification process. Moreover, a comparison of the results obtained by various methods indicates

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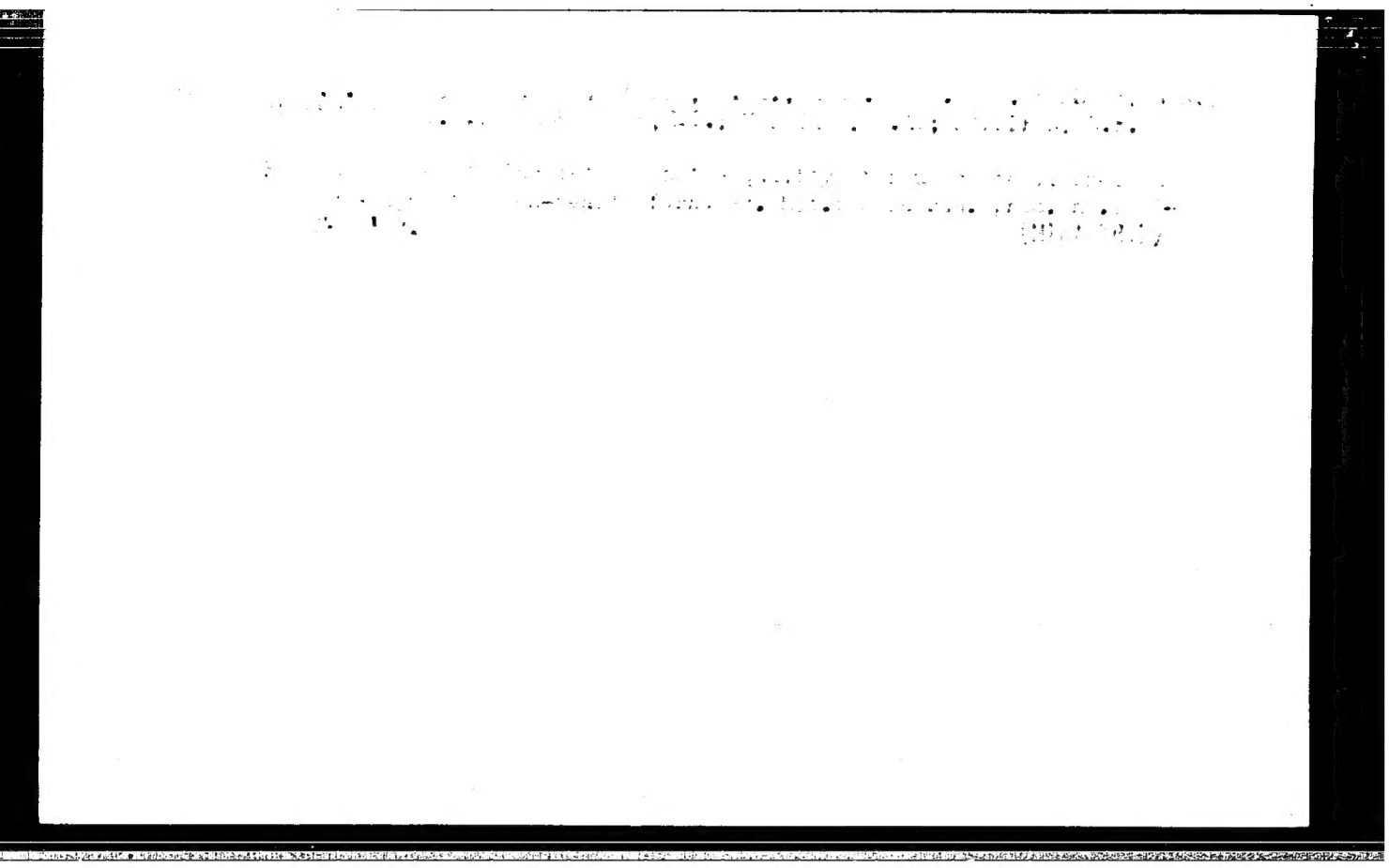
that the solidification of ingots of the shapes investigated in the vertical direction is completed earlier than in the horizontal direction. Therefore, in the authors' view an improved method of vertical probing which they developed gives more information on the kinetics of solidification of ingots and does not interfere with the subsequent utilization of the probed ingots. The method, called differential probing, consists of inserting a mild steel rod (12 mm in diameter) into the ingot under its own weight and noting the length of the immersed part of the rod (height of the liquid phase) then by applying a certain force the rod is immersed to the solid bottom of the ingot and again the length of the rod immersed is noted. The difference gives the height of the two phase (liquid + solid) zone. Other data, characterizing the kinetics of solidification, can be calculated from the above measurements, for instance the height of the solid bottom layer and, if the initial level of the metal in the top is known, shrinkage to the moment of probing. By repeating such measurements throughout the solidification period, kinetic curves characterizing vertical movement of the solid phase

STRAKHOV, V.G.; SKOBLO, S.Ye.

Heat transfer from a heated riser head of a sheet ingot. Izv. vys. ucheb. zav.; chern. met. 6 no.11:70-78 '63. (MIRA 17:3)

1. Zhdanovskiy metallurgicheskiy institut.



STRAKHOV, V.G., kand. tekhn. nauk; SKOBLO, S.Ya., kand. tekhn. nauk; SAPELKIN, N.P., inzh.; CHERNYSHEV, I.S., inzh.; OLESHKEVICH, T.I., inzh.; ANTOKHIN, N.T., inzh.; PASHCHENKO, N.K., inzh.

Heating the riser heads of an ingot by exothermic plates. Stal' 24 no.1:37-39 Ja '64. (MIRA 17:2)

1. Zhdanovskiy metallurgicheskiy institut i zavod imeni Il'icha.

L 45722-65 EWT(d)/EEC(k)-2/EED-2/EWP(1) Pq-4/Pg-4/Pk-4 IJP(c) BB/GG/GS

ACCESSION NR: AT5011634 UR/0000/64/000/000/0616/0624

AUTHOR: Kitovich, V. V.; Vostrikova, Z. P.; Strakhov, V. G.

TITLE: Experimental model of a thin film z-type memory with constant displacement field

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki. Lvov, 1962. Magnitnyye elementy avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki (Magnetic elements of automatic control, remote control, measurement and computer engineering); trudy soveshchaniya. Kiev, Naukova dumka, 1964, 616-624

TOPIC TAGS: thin film memory, z-type memory, constant displacement field

ABSTRACT: The theoretical analysis of the thin film z-type matrices for memories without displacement has been performed by E. M. Bredly (Y. Brit. IRE, v. 20, no. 10, 1960, pp 765-784). The present paper analyzes the operation of such a matrix in the presence of a constant displacement field. This analysis is needed because during the first stage of production the easy magnetization axis may be displaced to the right as well as to the left relative to the edge of the matrix.

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L 45722-65

ACCESSION NR: AT5011634

This axis deviation was determined by a specially constructed device whose construction and operation are described in detail. Experimental results show that memory circuits with displacement permit a larger angular spread of the easy magnetization axis. The experimental permissible limits for the registration and reading current variations seem to be compatible with reliable operation of the memory, though they turned out to be considerably smaller than those predicted by the theory. The ampere-windings of the registration and reading currents should be reduced since, otherwise, complications appear during the transition to printed circuits. Orig. art. has: 8 formulas, 7 figures, and 3 tables.

ASSOCIATION: None

SUBMITTED: 29Sep64 ENCL: 00 SUB CODE: DP

NO REF SOV: 001 OTHER: 004

Card 2/2

STRAKHOV, V.I.

Psychological analysis of the pedagogical test shown by student teachers. Vop.psikhol. 5 no.6:169-174 N-D '59.
(MIRA 13:4)

1. Saratovskiy pedagogicheskiy institut.
(Student teaching--Psychological aspects)

STRAKHOV, V.I.

Psychological analysis of pupils' attention in manual training lessons. Vop.psikhol. 7 no.2:29-40 Mr-Ap '61. (MIRA 14:6)

1. Kafedra psikhologii Saratovskogo pedagogicheskogo instituta.
(Manual training—Psychological aspects) (Attention)

STRAKHOV, V.I.

Some remarks concerning N.L.Afanas'ev's article "Smoothing gravity anomalies." Izv.AN SSSR.Ser.geofiz. no.4:618-620 Ap '63. (MIRA 16:4)

1. Institut fiziki Zemli AN SSSR.
(Gravity anomalies)

STRAKHOV, V.I., dotsent

Attention of schoolchildren in gymnastics classes. Uch. zap. Ser. gos. pedag. inst. no.42:3-251 '63 (MIR:1)

MIZIN, V.G., inzh.; SAPONOV, N.I., inzh.; SEROV, G.V., inzh.; KOPYTOVNIKOV, V.V., inzh.; FISHMAN, B.I., inzh.; CHARNOV, V.M., inzh.; MIKITIN, Yu.K.

Production of 75% ferrosilicon with coke from a charge with an increased content of gas coal. Stal' 25 no.2:133-135 F '65. (MIRA 18:4)

1. Kuznetskiy zavod ferrosplavov i Kuznetskiy filial Vostochnogo nauchno-issledovatel'skogo uglekhimicheskogo instituta.

KHORIN, V.N., doktor tekhn. nauk; STRAKHOV, V.M., starshiy nauchnyy sotrudnik.

Expanding the overall mechanization of [illegible] operations at the Pechora coal basin. Ugol' 39 no.6[illegible] June [illegible] (MIRA 17:7)

1. Institut gornogo dela imeni A.A. Skochinskogo.

15-57-4-5841

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4, p 140 (USSR)

AUTHOR: Strakhov, V. N.

TITLE: The Solution of the Inverse Problem in Magnetic Prospecting (K resheniyu obratnoy zadachi magnitorazvedki)

PERIODICAL: Tr. Mosk. geol-razved. in-ta, 1955, Vol 28, pp 159-164.

ABSTRACT: The author proposes a method for solving the inverse problem in gravimetry and magnetic prospecting. The solution is based on the nature of isopotential lines and their behavior in gravitational and magnetic fields formed by bodies bounded by a simple plane or by double plane layers. Examples are given of magnetic isopotential lines in the vertical plane from tabular and linear dipoles. The vertical and horizontal producing gravitational potential is also shown for an infinite horizontal prism.

V. M. D.

Card 1/1

Strakov, V. N. Determination of certain fundamental parameters of magnetized bodies from data of magnetic observations. Izv. Akad. Nauk SSSR [illegible] 1956, 143-156. (Russian)

A global interpretation method based on the use of integrals of suitably chosen functions ... moments, for instance, of the [illegible] ... [illegible] ... in the vertical plane of S.

Generalizing the [illegible] ... functions, the author deals ... the determination of the ... of the total magnetic moment of the body and the position of the center of gravity ... provided the magnetization is ... uniform. The mathematical ... [illegible]

It is hoped that ... will attract the attention of specialists ... this method. *E. Kogbetliantz* (New York, N.Y.)

STRAKHOV, V. N.

"Some Problems on the Methods of Interpreting Magnetic Anomalies. I," by V. N. Strakhov, Moscow Geological Prospecting Institute, Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, No 12, Dec 56, pp 1389-1399

Based on the work of N. K. Stupak, an entirely new method is proposed for the solution of plane problems of magnetic surveying. This is based on a new manner of constructing a transparent grid paper, which aids in the interpretation of given magnetic observations. The paper is made in two forms; that based on logarithmic indicatrix is recommended by the author for practical use.

Both the geometric and the grid method used in the solution of inverse problems, as well as an analysis of grid curves, are presented.

Sum 1258

STRAKHOV, V.N.

Studies on the theory of the interpretation of magnetic anomalies.
Trudy MGRI 32:107-127 '58. (MIRA 12:10)
(Magnetism, Terrestrial)

AUTHOR: Strakhov, V. N.

TITLE: Some Theoretical Problems of 2-Dimensional Magnetic Surveying (K teorii dvumernoy zadachi magnitorazvedki)

PERIODICAL: Izvestiya Akademii Nauk SSSR. Seriya geofizicheskaya, 1959, Nr 2, pp 244-255 (USSR)

ABSTRACT: The theoretical magnetometry can be divided into two main divisions: first, the general type, where the form and distribution of the magnetic field is not known, and the second where these data can be determined. One of the mathematical methods belonging to the first case is the method of 2-dimensional interpretation of the magnetic anomalies. The theory of function of the complex variable applied to this theory, solves many problems in a simple way. The method can be explained when a system of coordinates is considered with the axis O_x directed transversely to the movement of a disturbed body, while the axis O_y is vertical and the angle from the axis O_x is read in an anticlockwise direction.

The coordinate of the point M , situated outside the magnetic point of intersection S , is $z = x + iy$. The coordinate of S is $\zeta = \xi + i\eta$. It is assumed that a known value A

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Some Theoretical Problems of 2-Dimensional Magnetic Surveying

situated along a profile has components H and Z (Eq (1), α and β - constants). Then the following theorem can be defined: if a magnetized body does not conform to the uniformly distributed magnetic density $\mu(\zeta) = \mu(\zeta)e^{i\delta(\zeta)}$, then the function $W_1^{(n)}(z)$ can be considered as the complex characteristic of the body with the effective distribution of density of magnetic moments expressed by the formula (7). The proof of the above is given by Eqs (8) to (10). The function $W_1^{(n)}(z)$ can be found from the expression (9) while the components H_1 and Z_1 of the effective tension T_1 are found from Eqs (4) and (5). It can be seen from Eqs (10 and (1) that A can be considered in both the horizontal and vertical directions, i.e. if there are horizontal and vertical components HZ then such a distribution of the magnetic density exists that αH + βZ will be a horizontal (or vertical) component of the field. If A is considered as a horizontal component H_p of the effective

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Some Theoretical Problems of 2-Dimensional Magnetic Surveying

tension. then in the case of the 2-dimensional method, a complex function $W_{1e}(z)$ could be established along a profile of observation. Thus the problem becomes reduced to finding the distribution and intensity of the magnetic field. The latter, denoted as $S_1(z)$ can be expressed as Eqs (14) and (15). Usually the component H is found when Z and ΔT are considered. But a simpler method will be when H_{e_2} is taken as a part of a known intensity $W_{1e_2}(z)$ (Eq 16). Then H_{e_2} can be formulated as Eq (17) and the other part, H_{e_1}, is found from the complex intensity $W_{1e_1}(s)$ (Eq 19). The whole problem can be described in the more general way, when a curve Γ divides a plane z into 2 parts so that the disturbed intersection S is situated in its lower part. Also it is assumed that the function $W_{1e_1}(s)$ is known while $W_{1e_2}(z)$ is determined by Eq (24) and its final form

Some Theoretical Problems of 2-Dimensional Magnetic Surveying

Eq (28), or, in the more general case, by the Eq (30). The complex movement of δ can be found when the following lemma is considered: if $\Phi(z)$ is a function analytical on the whole complex plane, except for the finite number of points below the curve Γ_0, then the integral (34) will converge if:

$$|z\Phi(z)| \rightarrow |z| \quad \text{for} \quad |z| \rightarrow \infty$$

Thus the formulae (34) to (36) can be derived and the complex moment can be expressed as Eq (37). The latter can be written in the more general case as Eq (41) when the expression (38) and the formulae (39) and (40) are considered. The problem of determination of the complex tension on the whole region of the disturbance, when the curve Γ_0 is defined, can be simply solved by the interval (42) together with the conditions

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Some Theoretical Problems of 2-Dimensional Magnetic Surveying

(44). Then the formula (47) will be found as a solution of the problem. There are no figures, and 13 references; 12 of the references are Soviet and 1 is English.

ASSOCIATION: Moskovskiy geologo-razvedochnyy institut (Moscow Geological Survey Institute)

SUBMITTED: June 4, 1957.

Card 5/5

STRAKHOV, V.N.

Theory of analytical continuation of two-dimensional gravity anomalies. Trudy MGRI 36:120-124 '59. (MIRA 15:5)
(Gravity prospecting)

24 (3)

AUTHOR: Strakhov, V. N. SOV/20-126-5-20/69

TITLE: On the Analytic Continuation of Two-dimensional Magnetic Fields (Ob analiticheskom prodolzhenii dvukhmernykh magnitnykh polej)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 5, pp 967 - 969 (USSR)

ABSTRACT: The general solution (2) of the problem of the analytic continuation of a two-dimensional field on a real axis in the half plane $Im(s) > Im(\zeta_0)$ is written down according to reference 1. It is shown that the complex field strength W_1 in the half plane can be expanded in a Newton's series. The author further investigates the case in which point s lies on the imaginary axis. $W_1(0,\beta)$, where $\beta = -is$, is again developed according to Newtonian binomials and the solution (8) of this equation is given (obtained by B. A. Andreyev (Ref 4) in a different way). The two solutions, equations (2) and (8), can be used for numerical computations. Their properties are briefly discussed. In the following, solution (8) is transformed and a method of approximation demonstrated which allows to solve the problem of the

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On the Analytic Continuation of Two-dimensional Magnetic Fields SOV/20-126-5-20/69

analytic continuation of a three-dimensional field mentioned at the end of this article. The solution is given by means of a Fourier-Bessel integral, equation (19) contains the solution in the n^{th} approximation. There are 5 Soviet references.

ASSOCIATION: Institut fiziki Zemli im. O. Yu. Shmidta Akademii nauk SSSR (Institute of the Physics of the Earth imeni O. Yu. Shmidt of the Academy of Sciences, USSR)

PRESENTED: March 30, 1959, by I. N. Vekua, Academician

SUBMITTED: March 29, 1959,

Card 2/2

S/049/60/000/004/003/018
E073/E535

AUTHOR: Strakhov, V. N.

TITLE: Integral Methods of Interpretation of ΔZ values of a Single Sign

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1960, No.4, pp.520-529

TEXT: Relatively frequently magnetic anomalies occur which are within the limits of accuracy of observations expressed by ΔZ values of a single sign (most frequently positive). Usually, for mathematical interpretation of ΔZ anomalies of this type, the conception of a surface carrying magnetic charges (masses) of a sign coinciding with the sign of the ΔZ values is used. In this case if the problem approaches a two-dimensional one, i.e. if the extension of the anomaly is larger than its width, it is mostly assumed that the surface will also be "a two-dimensional one", the trace of which in the vertical plane is in the shape of some open curve L. The most important parameter that characterizes the curve L from the point of view of exploratory geophysics is the distance from the observation profile (Ox-axis)

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S/049/60/000/004/003/018
E073/E535

Integral Methods of Interpretation of ΔZ of a Single Sign

to its centre of gravity, which in the first approximation should coincide with the centre of gravity of the magnetic masses. In this paper three different integral methods of determining this value are described. The obtained results are utilised for evaluating results of magnetic prospecting, in the area of the Kursk magnetic anomaly, obtained by the Magnetometry Division of the Institute of Physics of the Earth, AS, USSR between 1954 and 1956 (by N. P. Vtorov under the leadership of V. V. Kolyubakin). Comparison of the numerical results obtained by the three methods is made in Table 4; one of the three methods was found to give the best results. A theoretical evaluation has been made of the influence of systematic errors on the individual methods under consideration. The results of the practical and theoretical investigations lead to the conclusion that in interpreting two-dimensional anomalies of ΔZ of a single sign it is best to apply Eq.(27), p.523. There are 5 figures, 4 tables and 3 Soviet references.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki Zemli (Academy of Sciences USSR, Institute of Physics of the Earth)

Card 2/2

SUBMITTED: June 1, 1959

S/049/60/000/007/006/009/XX
E031/E335

3.9100
9.9700

AUTHOR: Strakhov, V.N.

TITLE: On the Calculation of the Vertical Gradient of Two-dimensional Magnetic Fields

PERIODICAL: Izvestiya Akademii nauk SSSR Seriya geofizicheskaya, 1960, No. 7, pp. 979 - 987

TEXT: Consider a vertical plane intersecting a disturbing body of infinite horizontal extent and magnetized in such a way that the anomalous magnetic field is two-dimensional. Taking this plane as the plane of the complex variable $z = x + iy$, the complex field strength $W_1(z)$ can be introduced. It is assumed that the line along which observations are made is the real axis of the coordinate system. The function $W_1(z)$ effects a conformal transformation of the upper half plane into some domain G of the plane $W_1(H.-Z)$ (Z is used for the conventional symbol E). The boundary of the domain is the image of the real axis in

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S/049/60/000/007/006/009/XX
E031/E335

On the Calculation of the Vertical Gradient of Two-dimensional Magnetic Fields

the z-plane. The derivative of $W_1(z)$ can also be regarded as giving a conformal transformation of the upper half plane into some domain G' in the plane $W_1(\frac{\partial z}{\partial y} \frac{\partial z}{\partial x})$. The boundary of G' can be constructed by determining the points on G which are the images of given points of the real axis in the z plane. The distance between successive points is chosen sufficiently small. The arc lengths Δl_k and the angles ψ_k formed by the tangents to the curve and the real axis are determined. Then $\Delta l_k / \Delta_k$ and $\psi_k = \psi_k + \pi$ give the radius vectors and the arguments of points on the boundary of G. The values of the vertical

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S/049/60/000/007/006/009/XX
E031/E335

On the Calculation of the Vertical Gradient of Two-dimensional Magnetic Fields

and horizontal gradients of the field are the Cartesian coordinates of points on this boundary. A number of theoretical examples were used to determine the accuracy of the method. Satisfactory results were obtained. In addition measurements in the region of Kursk were used. To avoid scatter of the points defining the curve it is desirable to plot the curves of $\Delta V_k/\Delta x$ against x and of V_k against x and from these smooth curves take the values required. The practical examples are discussed and it is suggested that discrepancies may be accounted for by the field not being entirely two-dimensional. A short error analysis is carried out. The error should not exceed 5-7 % except near the edges of the zone of anomaly and this is confirmed by the results. If the values of the vertical and horizontal components of the field are known the method can be used to calculate the gradients in the case of an arbitrary

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S/049/60/000/007/006/009/XX
E031/E335

On the Calculation of the Vertical Gradient of Two dimensional Magnetic Fields

physical relief. Since the values of the horizontal field component are not required in the above computations, they are determined by the use of a special char' which is described in the appendix. The basic expression is:

$$H(0) = \frac{1}{\pi} \int_{-\infty}^{+\infty} \frac{Z(x)}{x} \, dx \qquad (1)$$

but the actual integration is effected over a finite range using the Gaussian quadrature method of numerical integration with two ordinates except near the origin where six are required. There are 7 figures 1 table and 6 Soviet references

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86315
S/049/60/000/007/006/009/XX
E031/E335

On the Calculation of the Vertical Gradient of Two-dimensional Magnetic Fields

ASSOCIATION: Akademiya nauk SSSR Institut fiziki Zemli (Academy of Sciences, USSR, Institute of Physics of the Earth)

SUBMITTED: June 11, 1959

Card 5/5

S/552/60/000/027/007/008
H000/H000

AUTHOR: Strakhov, V. N.

TITLE: Interpretation of magnetic anomalies of the KMA (Kursk Magnetic Anomaly) by constructing ΔZ isolines in the vertical plane.

SOURCE: Prikladnaya geofizika (sbornik statey), no. 27, 1960, 116-130

TEXT: Magnetic anomaly interpretation methods heretofore in use and the difficulties they present are reviewed. The method of analytical continuation of the field to the lower half-space, where anomalies have their source, is attended by the following difficulties: 1) complexity of computing field values in the lower half-space; and 2) lack of any systematic notion of the proper use of the analytical continuation method. The following solution is attempted for these difficulties: The field in the layer between the observation profile and the anomaly source is computed. The analytical functions for the complex

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Interpretation of magnetic anomalies (Cont.) S/552/60/000/027/007/008
H000/H000

field intensity are expanded in Newton series, and the vertical component of the complex field is obtained as

$$Z(0, -h) = \sum_{n=0}^{\infty} (-1)^n \Delta^n Z(0, 0),$$

$$H(0, -h) = \sum_{n=0}^{\infty} (-1)^n \Delta^n H(0, 0).$$

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Using the third approximation (k = 3) and applying Poisson's integral for the solution of the upper half-plane problem, simple transformations yield the formula

$$\delta Z = \frac{h}{\pi} \int_{-\infty}^{+\infty} Z(x, 0) \left| \frac{6}{x^2 + 4h^2} - \frac{8}{x^2 + 4h^2} + \frac{3}{x^2 + 9h^2} \right| dx =$$

$$= \frac{1}{\pi} \int_{-\infty}^{+\infty} Z(\xi, 0)\, K(\xi)\, d\xi,$$

where $K(\xi) = \frac{6}{1+\xi^2} - \frac{8}{4+\xi^2} + \frac{3}{9+\xi^2}$; $\xi = \frac{x}{h}$.

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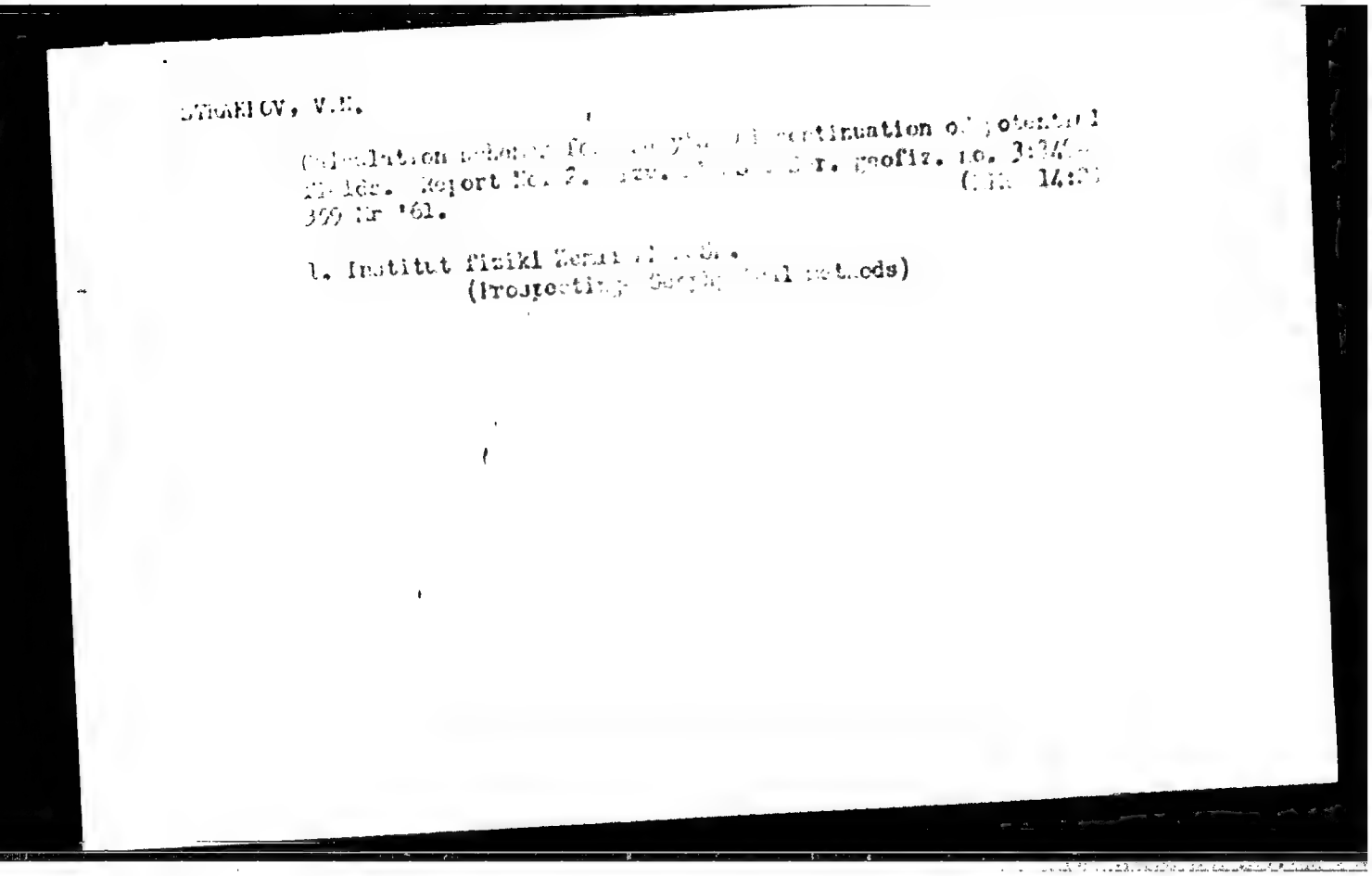
by which δz can be fairly accurately computed provided the function $K(\xi)$ has properties of the kernel of Poisson's integral. In general, δz is obtained with an accuracy equal to that of the field in the upper half-space. The numerical integration process is expressed by nomograms, and the value of δz determined by graticule. Two straight line graticules are given, one for computing δz and the other for the upper half-space field, and the manner of their construction and use is described. Sample interpretations are given for five points in the Kursk magnetic anomaly region. The depth of occurrence of ferrous quartzites determined from magnetic data agrees witnin 10% with drilling results. There are 9 figures, 3 tables, and 2 graticules. The most important English-language references read as follows: Evjen, H. M., "The place of the vertical gradient in gravitational interpretation," Geophysics, v. 1, no. 1, 1936; Pirson, S. J., "Quantity interpretation of gravity meter surveys", The oil weekly, v. 117, no. 7, 1945; Rainboy, H., "The interpolation of torsion balance data", World Petroleum Congress, v. 1, London, 1933.

STRAKHOV, V.N.

Calculation schemes for analytical continuation of potential fields. Report No. 1. Izv. AN SSSR. Ser. geofiz. no. 2:215-223 F '61. (MIRA 14:2)

1. Institut fiziki Zemli AN SSSR.
(Prospecting—Geophysical methods)



STARKOV, V.N.

(Calculation tables for [illegible] continuation of potential fields. Report No. 2. [illegible] geofiz. sb. 3:246-[illegible] (MIRA 14:3) 399 '61.

1. Institut fiziki Zemli [illegible].
(Prospecting, Geophysical methods)

S/169/62/000/009/022/120
D228/D307

AUTHOR: Strakhov, V. N.

TITLE: Stating the theory of the analytical continuance of potential fields in magnetic- and gravity-anomaly interpretation courses

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 25, abstract 9A162 (Izv. vyysh. uchebn. zavedeniy, Geol. i razvedka, no. 7, 1961, 126-133)

TEXT: The author notes that the theory of analytical continuance is important for the processing of magnetic and gravity anomalies, and that it is necessary to develop mathematically strict methods, which can be readily stated to the students of higher educational institutions. It is suggested that in operations the basic conclusions of the theory for the analytical continuance of potential fields should be systematically deduced by means of the Fourier integral conversions. Formulas are given for the field at any point of the lower semispace that contains no features of the

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S/169/62/000/009/022/120
D228/D307

Stating the theory ...

functions, describing the field, for two- and three-dimensional problems in an integral form and as a series. [Abstracter's note: Complete translation.]

Card 2/2

STRAKHOV, V.N.

Calculation schemes for analytical continuation of potential fields. Izv. AN SSSR. Ser. geofiz. no.9:1290-1313 S '61. (MIRA 14:9)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Prospecting--Geophysical methods)

STRAKHOV, V.N.

Derivation of quadratic formulas with near equal coefficients. Izv. AN SSSR. Ser. geofiz. no.12:1713-1725 D '61. (MIRA 14:12)

1. Institut fiziki Zemli AN SSSR.
(Approximate computation)

STRAKHOV, V.N.

Approximation of functions on the semiaxis and application of similar approximations to the calculation of integrals used in interpreting magnetic and gravity anomalies. Izv. AN SSSR. Ser. geofiz. no.12: 1726-1737 D '61. (MIRA 14:12)

1. Institut fiziki Zemli AN SSSR.
(Approximate computation) (Magnetic prospecting)
(Gravity prospecting)

ZHAVORONKIN, I.A.; STRAKHOV, V.N.

Interpreting complex magnetic anomalies in the Belgorod region of the Kursk Magnetic Anomaly. Prikl. geofiz. no.31:248-256 '61. (MIRA 15:3)

(Belgorod region--Magnetic prospecting)

STIGAJIOV, V.N.

Analytical continuation of two-dimensional potential fields and its use in solving inverse problems in magnetic and gravity prospecting. Izv. AN SSSR. Ser. geofiz. no.3:307-316 Mr '62. (MIRA 15:2)

1. AN SSSR, Institut fiziki Zemli.
(Magnetic prospecting)
(Gravity prospecting)

LAPINA, M.I.; STRAKHOV, V.N.

New method for determining elements of the magnetic field in the upper half-space from the given distribution of the vertical component ΔZ on a plane. Izv. AN SSSR. Ser. geofiz. no.3:317-335 Mr '62. (MIRA 15:2)

1. AN SSSR, Institut fiziki Zemli.
(Magnetic prospecting)

STRAKHOV, V.N.

Analytical continuation of two-dimensional potential fields and its use in solving inverse problems in magnetic and gravity prospecting. Izv. AN SSSR. Ser. geofiz. no.3:336-347 Mr '62. (MIRA 15:2)

1. AN SSSR, Institut fiziki Zemli.
(Magnetic prospecting)
(Gravity prospecting)

STRAKHOV, V.N.

Analytic extension of two-dimensional potential fields and its use for solving the inverse problem of magnetic and gravitational prospecting. Part 3: Inversion of Newton's integral transformation. Solution to the second problem. Izv. AN SSSR. Ser. geofiz. no.4: 491-505 Ap '62. (MIRA 15:4)

1. Institut fiziki Zemli AN SSSR.
(Magnetic prospecting) (Gravity prospecting)
(Transformations (Mathematics))

STRAKHOV, V. N.

Dissertation defended for the degree of Candidate of Physicomathematical Sciences at the Institute of Earth Physics imeni O. Yu. Shmidt in 1962:

"Theory of the Analytic extension of Two-Dimensional Potential Fields."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

STRAKHOV, V.N.

Theory of the computation of second vertical derivatives of potential fields. Izv.AN SSSR. Ser.geofiz. no.12:1772-1785 '62. (MIRA 16:2)

1. Institut fiziki Zemli AN SSSR.
(Field theory)

LAPINA, M.I.; STRAKHOV, V.N.

New method for calculating the vertical derivatives of potential fields in the upper half space. Izv.AN SSSR.Ser.geofiz. no.4:561-577 Ap '63. (MIRA 16:4)

1. Institut fiziki Zemli AN SSSR.
(Magnetism, Terrestrial)

STRAKHOV, V.N.

Some values of the depth of bedding of disturbing bodies. Izv. AN SSSR. Ser.geofiz. no.1:90-109 Ja '63. (MIRA 16:2)

1. Institut fiziki Zemli AN SSSR.
(Magnetic anomalies) (Gravity anomalies)

STRAKHOV, V.N.

Some computation formulas for determining secondary vertical derivatives of potential fields. Izv. AN SSSR, Ser.geofiz. no.1:110-127 Ja '63. (MIRA 16:2)

1. Institut fiziki Zemli AN SSSR.
(Potential, Theory of) (Field theory)

STRAKHOV, V.N.

Determination of the I/δ magnitude of obliquely magnetized two-dimensional bodies. Izv. AN SSSR. Ser.geofiz. no.2:333-335 F '63. (MIRA 16:3)

1. Institut fiziki Zemli AN SSSR.
(Magnetic anomalies) (Gravity anomalies)

STRAKHOV, V.N.

Reduction of the problem of an analytical continuation to a horizontal layer in solving first-order linear integral equations of the convolution type with rapidly decreasing kernels. Izv. AN SSSR. Ser. geofiz. no.8:1206-1221 Ag '63. (MIRA 16:9)

1. Institut fiziki Zemli AN SSSR. Predstavleno chlenom redaktsionnoy kollegii Izvestiy AN SSSR, Seriya geofizicheskaya, N.V.Zvolinskim.
(Integral equations)

STRAKHOV, V.N.

Devising optimum computation schemes for transformations of potential fields. Part 2. Izv. AN SSSR. Ser. geofiz. no.1: 55-67 Ja'64. (MIRA 17:2)

1. Institut fiziki Zemli AN SSSR.

STRAKHOV, V.N.

Application of Parseval's formulas from the theory of Fourier transformations to the interpretation of magnetic and gravity anomalies. Geol. i geofiz. no.10:141-157 '63. (MIRA 17:1)

1. Institut fiziki Zemli imeni O.Yu. Shmidta AN SSSR, Moskva.

STRAKHOV, V.N.

Composition of optimum computation schemes for transformations of potential fields. Part 1. Izv. AN SSSR. Ser. geofiz. no.12:1780-1797 D '63. (MIRA 17:1)

1. Institut fiziki Zemli AN SSSR.

STRAKHOV, V.N.

Numerical method for solving convolution type linear integral equations. Dokl. AN SSSR 153 no.3:533-536 N '63.
(MIRA 17:1)

1. Institut fiziki Zemli im. O.Yu. Shmidta AN SSSR. Predstavleno akademikom M.A. Lavrent'yevym.

STRAKHOV, V.N.

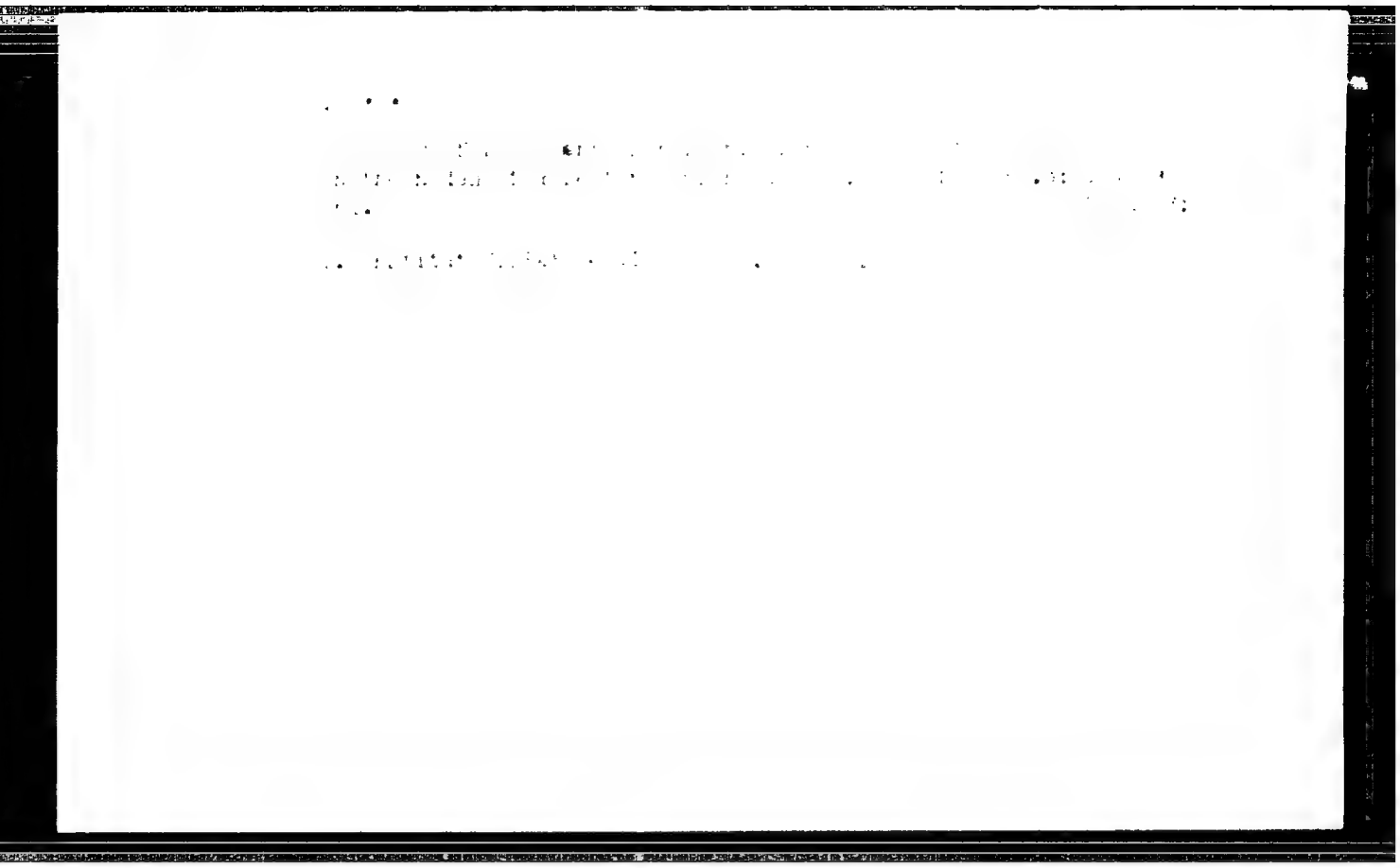
Devising optimum computation schemes for transformations of potential fields. Part 3. Izv. AN SSSR. Ser. geofiz. no.1: 68-81 Ja'64. (MIRA 17:2)

1. Institut fiziki Zemli AN SSSR.

STRAKHOV, V.N.

Construction of optimum computation schemes for transformations of potential fields. Part 4. Izv. AN SSSR. Ser. geofiz. no.2:213-227 F '64. (MIRA 17:3)

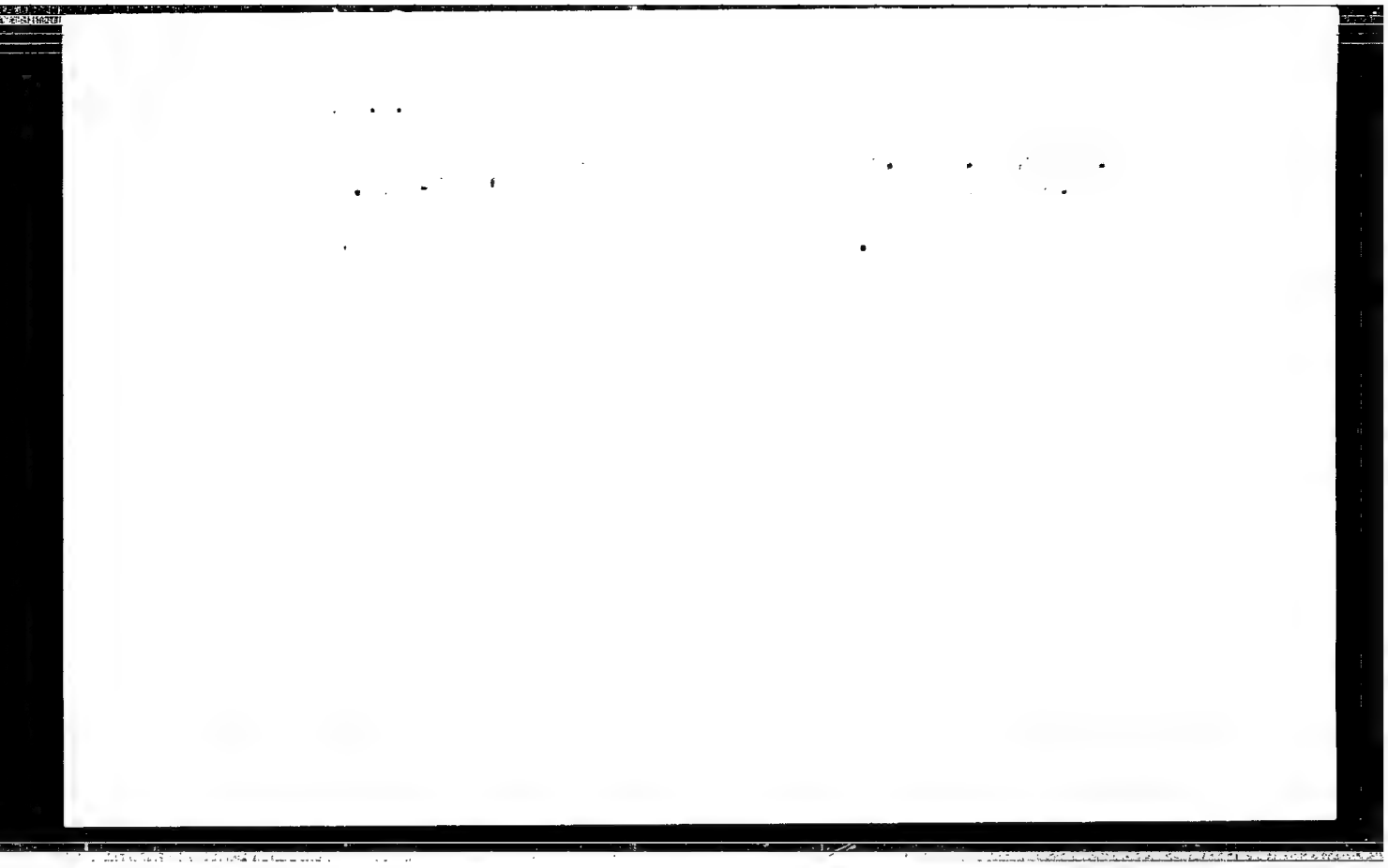
1. Institut fiziki Zemli AN SSSR.



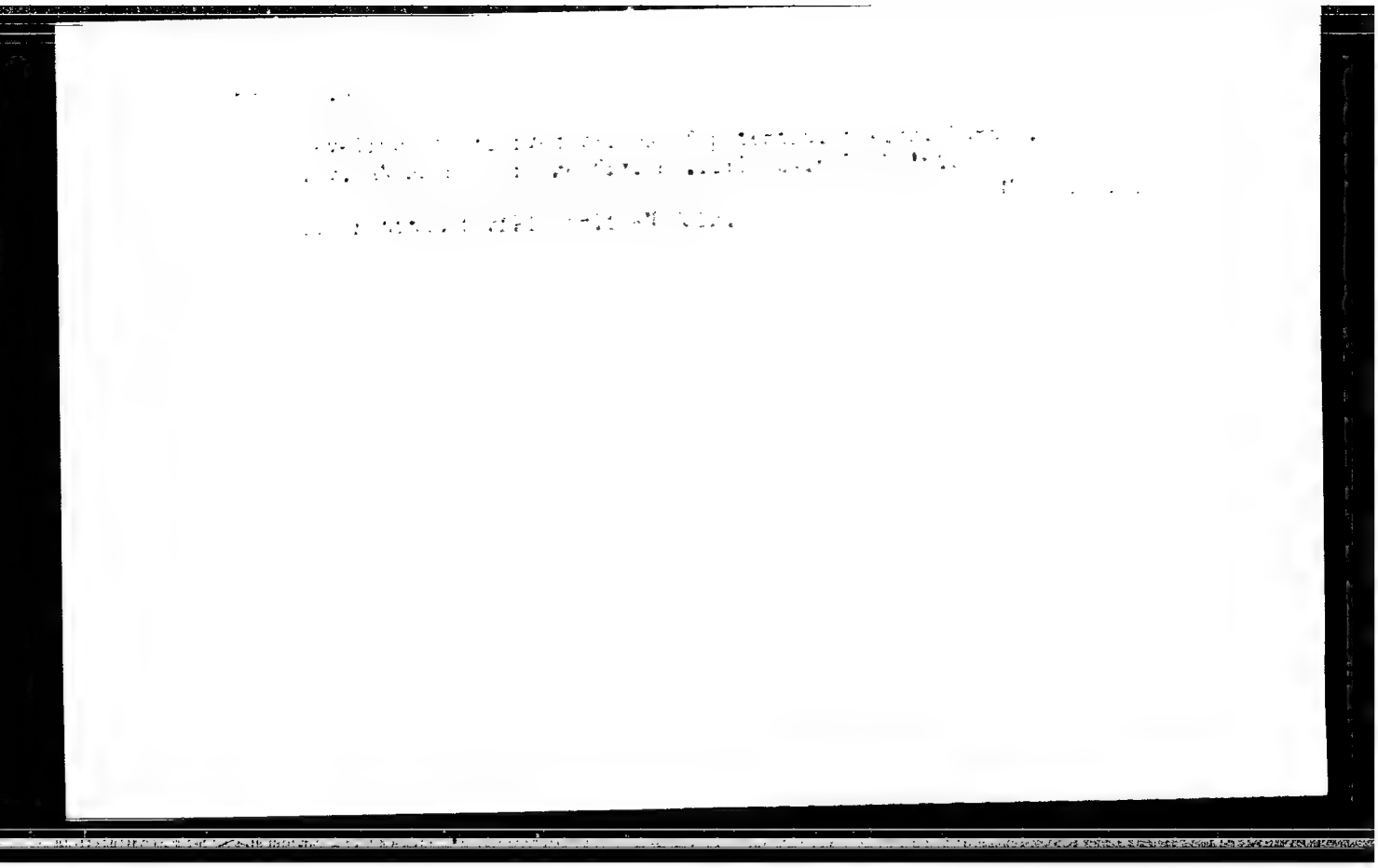
ZHARKOV, V. N.

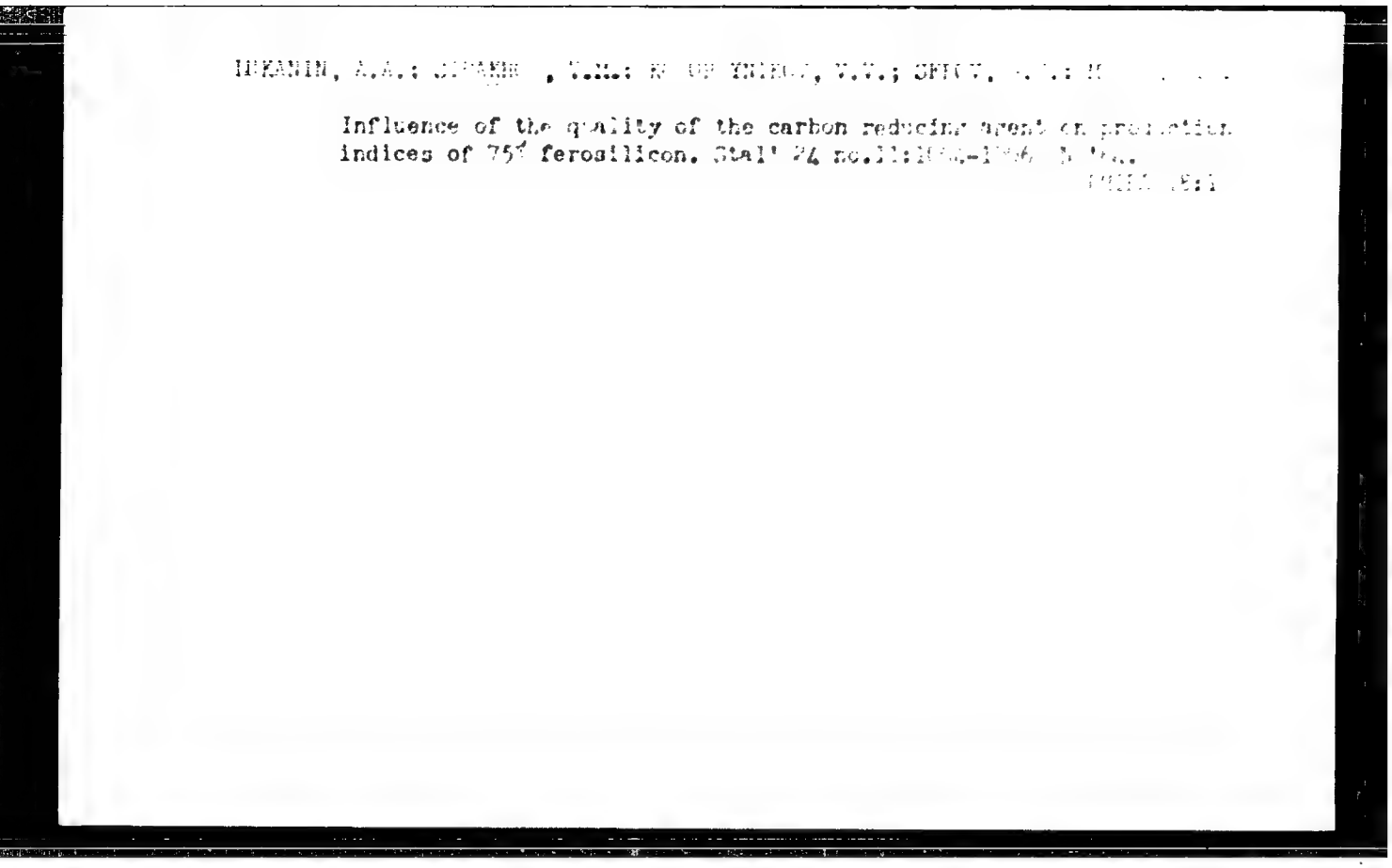
Theory of the trial-and error method. Izv. AN SSSR.Ser.geofiz. no. 4:494-509 Ap '64. (MIRA 17:5)

1. Institut fiziki Zemli AN SSSR.



APPROVED FOR RELEASE: 08/26/2000 CIA-RDP86-00513R001653420015-4"





New method for calculating convolution integrals. Izv. AN
SSSR. Ser. geofiz., no.12:1791-1800 D '64. (MIRA 18:4)

1. Institut fiziki Zemli AN SSSR.

[redacted], V.N.

Testing the accuracy of the analytic continuation of magnetic and gravity anomalies into a horizontal layer. Vych. zap. Ferm. gos. un. no.[illegible]-[illegible] '64. (MIRA 18:1)

STRAKHOV, V.N.

An inverse problem in the theory of logarithmic potential.
Izv. AN SSSR. Fiz. zem. no.1:90-97 '65.
(MIRA 18:5)

1. Institut fiziki Zemli AN SSSR.

L 42042-65 EWP(v)/EWT(1)/EEC Pe-5/Pr-4/Pi-4/Pe-4/Pq-4 GW
ACCESSION NR: AP5017041 UR/0387/65/000/004/0060/0072
550.838

AUTHORS: Strakhov, V. N.; Devitsyn, V. M.

TITLE: The reduction of observed values of potential fields to a single equation

SOURCE: AN SSSR. Izvestiya. Fizika zemli, no. 4, 1965, 60-72

TOPIC TAGS: computer programming, potential theory, gravitation field, magnetic field

ABSTRACT: The problem of reducing observations on "low" relief of potential anomalies--gravity or magnetic-- to a single horizontal plane in the lower half space is discussed. This approach leads to a simpler and more convenient solution, especially when using an electronic computer, than otherwise possible. It is assumed that some horizontal plane ($z = 0$) may be found between the actual surface of the earth (on which observations have been made at definite positions on a grid) and the disturbing bodies that create the anomalous field, whether magnetic or gravitational, described by a function for the external form of the bodies--$U(x,y,z)$. The task of reducing the observed values of this function is considered a problem in analytical combination of the function on the plane that may be defined by $z = 0$. Two basic relations must be stated: 1) the sources of the field (disturbing bodies)

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L 6307?-65
ACCESSION NR: AP5017041

are placed in empty space, and 2) the horizontal plane is assumed to lie such that the sources of the field are entirely below it and the earth's surface is entirely above. A two-dimensional field is considered first, because of greater simplicity, and the results are modified for the three-dimensional case. A computer program is set up, and all the operators are defined. Theoretical results are compared with observational data for the Kursk magnetic anomaly. It is found that the elimination of even small systematic distortions due to "low" relief may lead to more reliable discrimination of the effect of a thin bed or of a weakly magnetized bed. This is illustrated by data on the oxidized quartzites at the Kursk magnetic anomaly. Orig. art. has: 2 figures, 4 tables, and 19 formulas.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of Sciences SSSR, Institute of Terrestrial Physics)

SUBMITTED: 14Feb64 ENCL: 00 SUB CODE: ES, DP

NO REF SOV: 006 OTHER: 000

Card 2/2

L 32157-66 EWT(d)/EWT(l) IJP(c)

ACC NR: AP6010014 (A,N) SOURCE CODE: UR/0387/65/000/011/0035/0047

47
B

AUTHOR: Strakhov, V. N.

ORG: Institute of Physics of the Earth, Academy of Sciences, SSSR (Institut fiziki Zemli Akademii nauk SSSR)

TITLE: Construction of optimal computational schemes for the transformation of potential fields. V

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 11, 1965, 35-47

TOPIC TAGS: mathematic analysis, field theory, Fourier analysis, harmonic series, approximation method, function, correlation function, Fourier transform, harmonic function

ABSTRACT: A computational scheme is developed for the transformation of potential fields by assigning approximate values to harmonic transformation functions of the class $U(H)$. Random empirical components and their variations were considered in the transformations. These were represented as two-dimensional functions of the type

$$\overline{U}(x,0) = U(x,0) + \varepsilon(x),$$

where $U(x,0)$ are the exact values for $z=0$ of the function $U(x,y,z) \in U(H)$ and $\varepsilon(x)$ is a certain probability function; also as three-dimensional functions

$$\overline{U}(x,y,0) = U(x,y,0) + \varepsilon(x,y).$$

UDC: 550.831 + 550.838

Card 1/2

where $U(x,y,0)$ are the exact values for $z=0$ of the function $U(x,y,z) \equiv U(H)$ and $s(x)$ is a probability function. For both cases the mean value of $s(x)$ and $s(x,y)$ is equal to zero, e. g., for $s(x,y)$

$$M[s(x,y)] = \lim_{\substack{X\to\infty \\ Y\to\infty}} \frac{1}{2X\cdot 2Y} \int_{-X+a}^{+X+a} \int_{-Y+b}^{+Y+b} s(x,y)\,dx\,dy = 0, \qquad a = \text{var}, \quad b = \text{var}.$$

Correlation functions are given for the three-dimensional case as

$$B_{s(x,y)}(\xi,\eta) = \lim_{\substack{X\to\infty \\ Y\to\infty}} \frac{1}{2X\cdot 2Y} \int_{-X+a}^{+X+a} \int_{-Y+b}^{+Y+b} s(x,y)s(x-\xi, y-\eta)\,dx\,dy, \qquad a = \text{var}, \quad b = \text{var}.$$

These were expanded into harmonic series and boundary conditions were set up for ξ and η. The arrangement of basic problems using these functions was analyzed by using Fourier transforms--$V(x,y)$ for two-dimensional functions and $V(x,y,z)$ for three-dimensional functions. Two arrangements using the final forms of these transforms were given and the existence and uniqueness of the solutions were established. The principles establishing the equivalence of the two arrangements were discussed. Orig. art. has: 65 formulas.

SUB CODE: 12/ SUBM DATE: 07Feb64/ ORIG REF: 004/ OTH REF: 002

ACC NR: AP6036359 SOURCE CODE: UR/0387/66/000/011/0055/0067

AUTHOR: Strakhov, V. N.

ORG: Academy of Sciences SSSR, Institute of Physics of the Earth (Akademiya nauk SSSR, Institut fiziki Zemli)

TITLE: Use of the Moller-Fok integral transformation to solve problems in mangetic and gravitational methods of prospecting geophysics

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 11, 1966, 55-67

TOPIC TAGS: geophysics, prospecting, magnetic field, gravitation field, gravimetry, magnetometry, analytic function, harmonic function

ABSTRACT: The article deals with several of the most important typical problems involving the reconstruction, from specified values on half of the axis, of a complex analytic function, which describes an anomalous two-dimensional magnetic or gravitational field on the entire axis, by reducing the problem to an integral equation of the first kind solved with the aid of the Moller-Fok transformation. The problem of construction a function which is analytic in a closed region from specified values on part of the boundary of the region, and some inverse problems of gravimetry, are also reduced to such an approach. The specific problems considered are: 1. Reconstruction of conjugate harmonic functions on the Ox axis from specified values of these functions on the half-line $-1 \leq x \leq +\infty$, which is frequently encountered in magnetic and gravimetric surveying where anomalies terminate long before the emergence to the nor-

Card 1/2 UDC: 517.392: 550.83

L 44601-66 EWT(1)/EWT(m)/ELC(k)-2/T/EWP(k)/EWP(t)/ETI IJP(c) MG/JD/JG

ACC NR: AP6030960 SOURCE CODE: UR/0181/66/008/009/2616/2622

AUTHOR: Basov, N. G.; Yeliseyev, P. G.; Zakharov, S. D.; Zakharov, Yu. P.; Orayevskiy, I. N.; Pinsker, I. Z.; Strakhov, V. P.

72
B

ORG: Physics Institute im. P. N. Lebedev, AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: Certain properties of GaAs laser diodes

SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2616-2622

TOPIC TAGS: solid state laser, semiconductor laser, gallium arsenide laser, semiconductor diode

ABSTRACT: Phenomenological methods were used in an experimental study of certain properties of GaAs laser diodes (loss factor, quantum yield, differential efficiency, gain). The specimens were prepared by the diffusion of zinc into n-type GaAs crystals with electron concentrations of 2×10^{18} cm^{-3}. The cavities consisted of silver mirrors sputtered on polished crystalline surfaces pre-coated with a thin layer of SiO, and the electrical contacts consisted of sputtered metal (Au, Ni, In, Sn) films and fused-in electrodes. The measurements were carried out at 77K and the pulsed output was recorded by a calibrated silicon photodiode. The lowest threshold currents occurred in diodes which were cleaved on all four sides. A threshold current of 25 mamp was attained at the liquid He temperature and at a density of 75 amp/cm^2. C-w operation was observed from diodes with $I_{thr} < 0.5$ amp at 4.2K. The results

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ACC NR: AP6040960

indicate that the transformation of electrical power into optical power occurs with a yield of the order of unity and that the greatest loss is due to absorption in the medium inside the cavity. The loss coefficient for the better diodes was 5—10 cm^{-1} at 77K, a value which had been theoretically predicted elsewhere. The highest differential efficiency at 77K was 67%, although it was much lower in the case of diodes with Fabry-Perot cavities under high threshold current densities and in four-sided diodes with low threshold current densities. The efficiency of the p-n junctions was 0.5—0.55 with a 25% gain, which took into account losses in series resistance. Efficiencies of 60% were achieved in the case of optimal reflectivity and cavity length. The optical gain in the subthreshold region was 3.10^{-2} cm^{-1}. Orig. art. has: 2 tables, 6 figures, and 9 formulas. [YK]

SUB CODE: 20/ SUBM DATE: 17Jan66/ ORIG REF: 001/ OTH REF: 009/ ATD PRESS: 5078

Card 2/2

PUTILLO, V.P. [Putsillo, V.P.] (Moskva); ALEMPIEV, M.P. (Moskva); STRAKHOV, V.P. [Strakhov, V.P.] (Moskva)

Use of computers for automatic control of soaking furnaces. Prom. listy 17 no.5:333-338 My '62.

S/103/62/023/004/004/011
D299/D301

16.8000

AUTHOR: Strakhov, V.P. (Moscow)

TITLE: Mapping digital-servosystem dynamics on multivalent phase-plane

PERIODICAL: Avtomatika i telemekhanika, v. 23, no. 4, 1962, 467 - 480

TEXT: It is shown that digital servosystems can be analyzed by mapping their dynamics on the multivalent phase-plane. The behavior of such systems in the presence of various types of nonlinearities, is considered. By means of the phase-plane, the analysis of the process becomes very simple, as well as calculation of several important parameters. A block diagram of the system is shown. It incorporates 1 comparator and 4 converters. It is assumed that the transfer function of the linear part of the system has the form $W(p) = m/(Ip^2 + hp)$, where I, h and m are parameters. After transformations, one obtains the equation of motion in the form:

$$\ddot{X} + \dot{X} = -\Phi(\delta)_n \qquad (6)$$

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where δ is the error. The solution of Eq. (δ) is an integral curve, characterising the motion of the representative point in the phase-plane:

$$x = x_0 + y_0 - y + \Phi(\delta)_n \ln \frac{y_0 - \Phi(\delta)_n}{y - \Phi(\delta)_n}, \qquad (7)$$

where x_0, y_0 are the initial conditions. The phase-plane consists of several zones, each of which containing a family of integral curves, corresponding to a certain value of $\Phi(\delta)_n$. The block diagram of a system is shown which provides for a high rate of signal processing for large deviations, (which is analogous to the operation of relay systems), and proportional control on approaching the equilibrium position. The phase-plane, representing the motion of such a system, consists of a limited number of zones, equal to the number k_1 of the control-signal levels; $\Phi(\delta)_n = 0, \pm 1, \pm 2, \ldots, k_1$. The switching lines are the boundaries of the zones which pass through the points $x = \pm 0.5\Delta_x, \pm 1.5\Delta_x, \ldots, \pm(k_1 + 0.5)\Delta_x$;

($\Delta_x = \frac{h}{T_a^2 m}\Delta_y$, $T_a = 1/h$). From the phase-plane it is evident that the nature of the transient process (in the case of large deviations), can be judged only according to the final phase of motion of the representative point. The transient process is considerably affected by the quantity Δ_x; the latter can be changed only by way of changing the system parameters T_a, h and m. A digital servosystem with relay characteristic of control element is then considered. The motion of such a system can be represented on a 3-zone phase-plane. The integral curve is expressed by

$$x = x_0 + y_0 - y + \Phi_3'(\xi) \ln \frac{y_0 - \Phi_3'(\xi)}{y - \Phi_3'(\xi)} . \qquad (14)$$

The phase portrait of the motion of a digital servosystem differs from that of an ordinary relay system by the complex step form of the switching line. The equations for the switching lines are set up, account being taken of the characteristic of the nonlinear func-

tion $\Sigma_p(\gamma)$. A figure shows the motion of the representative point for various types of initial conditions; thereby the different regimes of system motion become evident. The condition for absence of overshoot is

$$\frac{k\nu}{T_k\omega} \leq 0.5\Delta_x. \qquad (18)$$

The required position of the switching lines is ensured by the choice of the parameters. By restricting the values of the rate feedback to the interval

$$\frac{(N+1-k)\nu}{\omega} \geqslant |T_k\lambda| \geqslant \frac{(N-k)\nu}{\omega}, \qquad (20)$$

it is possible to obtain a motion along a trajectory of the phase zone with $\Phi_3'(\bar{5}) = 1$. With an initial deviation $|x_0| > (n_p + N)\Delta_x$, the transient process will be nearly optimal; (the number of N discrete measuring units, is defined by an expression). A digital servosystem with non-singlevalued relay characteristic is then examined. The analysis of such a system is analogous to the foregoing.

Mapping digital-servosystem dynamics ... S/103/62/023/004/004/011
D299/D301

The zones of the phase-plane are superposed. Conclusions: The behavior of digital servosystems in the equilibrium position is analogous to that of ordinary relay systems. The obtained relationships for the system parameters permit one to relate transient performance to the parameters of the continuous part of the system, and also to the feedback element which quantizes the angular- and linear displacements. A similar method of investigation can be used for servosystems with more complex nonlinear elements, leading to sustained oscillations. Thereby it is possible to obtain formulas for the parameters on the basis of the conditions for absence of periodic motion. There are 9 figures, 2 tables, and 10 references: 8 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: I.E. Bertram, Effect of Quantization in Sampled Feedback Systems. Applications and Industry. No. 38, 1958; H. Ellis Phillip, Extension of Phase Plane Analysis to Quantizes Systems, IRE, Nat. Convent. Rec., v. 7, pt. 4, 1959.

SUBMITTED: October 6, 1961

Card 5/5

PUTSILLO, V.P. (Moskva); STRAKHOV, V.P. (Moskva); FEYGIN, L.I. (Moskva)

Use of a nonlinear programming method for solving a problem on the optimum transportation of metal to a blooming mill. Avtom.i telem. 23 no.8:1067-1077 Ag '62. (MIRA 15:7)
(Rolling (Metalwork)) (Automatic control)

ACCESSION NR: AP4038887 S/0119/64/000/005/0013/0014

AUTHOR: Strakhov, V. P.

TITLE: Nonlinear converter for mathematical simulation of functioning of digital automatic systems

SOURCE: Priborostroyeniye, no. 5, 1964, 13-14

TOPIC TAGS: automatic control, digital automatic control, automatic control simulation

ABSTRACT: The digital servo system is replaced by an equivalent continuous system with a nonlinear element having a multipositional relay characteristic. The structural diagram of the nonlinear converter (see Fig 2, Enclosure 1) is based on a discrete compensation of the input signal. The device compares X(t) subject to quantization with a reference value X*(t) expressed as an integer number of quants q. The error δ_x varies within one quant q. With $\delta_x = \pm q$, a

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ACCESSION NR: AP4038887

switch operates, and at the reference voltage output, the error jumps by one discrete unit. A simplified circuit diagram of the nonlinear converter is shown in Fig 3, Enclosure 1. The converter is designed with standard units. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 05Jun64 ENCL: 01

SUB CODE: DP, IE NO REF SOV: 002 OTHER: 000

Card 2/3

ACCESSION NR: AP4038887

ENCLOSURE 01

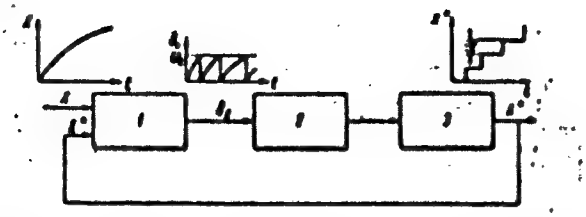

Fig 2. Structural diagram of the converter.
11- comparison device; 2 - switch; 3 - reference-voltage source; u_1 is the unit step of X°

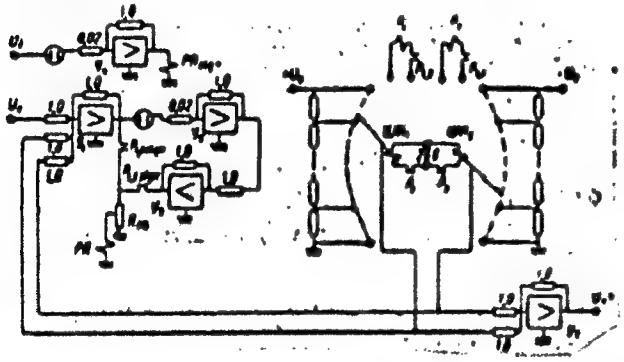

Fig 3. Simplified circuit diagram of the converter

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ACCESSION NR: AP4043478 S/0103/64/025/008/1247/1253

AUTHOR: Strakhov, V. P. (Moscow)

TITLE: Analysis of digital delayed servosystems

SOURCE: Avtomatika i telemekhanika, v. 25, no. 8, 1964, 1247-1253

TOPIC TAGS: servosystem, servosystem theory, digital servosystem

ABSTRACT: In an earlier author's work, digital servosystems were analyzed by mapping their dynamics on a multisheeted phase surface. The present article generalizes the method to cover a servosystem which contains delayed elements and also elements whose motion is describable by higher-order differential equations provided they can be approximated by a first-order or second-order delayed differential equation. The method for constructing a phase portrait is given. It is found that the above mapping permits analyzing the transient process involved and computing the system parameters. The behavior of the servosystem

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ACCESSION NR: AP4043478

at the equilibrium position is similar to the behavior of conventional delayed switched systems. The formulas developed for the servosystem parameters permit establishing a connection between the stability condition and the parameters of the continuous part of the system, the delay, and the characteristic of the feedback element which realizes quantization of angular or linear motion. Orig. art. has: 5 figures and 25 formulas.

ASSOCIATION: none

SUBMITTED: 26Jun63 ENCL: 00

SUB CODE: IE NO REF SOV: 007 OTHER: 000

Card 2/2

[illegible], [illegible] (Moskva)

Analysis of digital servosystems with time delay. Avtom. i telem. 25 no.8:1247-1253 Ag '64.

(MIRA 17:10)

APPROVED FOR RELEASE: 08/26/2000 CIA-RDP86-00513R001653420015-4"

FEL'DBAUM, Stepan Nikolaevich; LITVINOV, Anatoliy Pavlovich; STRAKHOV, V.P., red.

[Automatic systems with digital control computers; theory and design] Avtomaticheskie sistemy s tsifrovymi upravliaiushchimi mashinami; teoriia i proektirovanie. Moskva, Energiia, 1965. 222 p. (MIRA 18:8)

ACC NR: AP7001323 SOURCE CODE: UR/0057/66/036/012/2213/2215

AUTHOR: Yeliseyev, P. G.; Ismailov, I.; Krasil'nikov, A. I.; Man'ko, M. A.; Strakhov, V. P.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: Temperature dependence of the threshold current of injection-type lasers and their continuous emission under liquid nitrogen cooling

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 12, 1966, 2213-2215

TOPIC TAGS: laser, injection laser, laser threshold current, laser emission point, laser emission threshold, laser diode

ABSTRACT: The temperature dependence of the threshold current in the 77—200K range was investigated on diodes prepared by vapor-phase and liquid-state epitaxy methods. The vapor-phase specimens were prepared in the conventional way; the epitaxial diodes were prepared by the liquid-phase epitaxy method (as described by Nelson in RCA Review, 24, 1963, 603) from a solution of gallim arsenide in gallium at 920C. The substrates were gallium arsenide p-type plates doped with zinc at a concentration of about 7×10^{19} cm^{-3}. Graphs of threshold current vs. temperature for two epitaxial diodes show a linear dependence (gradients of 1.6 and 1.3% per degree). For vapor-phase specimens, the gradient is 3.9% at 77K; at higher temperatures the gradient declines slowly. The threshold current densities at 77K for vapor phase diodes lie

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within the 800—2000 amp/cm^2 range, and for epitaxial specimens, between 1600—8000 amp/cm^2. A formula is given for the conditions of generation as a function of threshold current, voltage on the junction, thermal resistance of the diode, and diode cross section. The formula shows that, at the nitrogen temperature, the threshold current density should not exceed 5700—5800 amp/cm^2 for epitaxial diodes and 1900 amp/cm^2 for vapor-phase diodes. Continuous emission was obtained at 1200—1600 amp/cm^2 in a number of diodes, but in some the threshold was not reached because of overheating. This result suggests that the actual thermal resistance is 3 to 4 times higher than the calculated value. The difference is attributed to insufficient contact between the diode and the cooling agent. Orig. art. has: 1 figure and 2 formulas. [FP]

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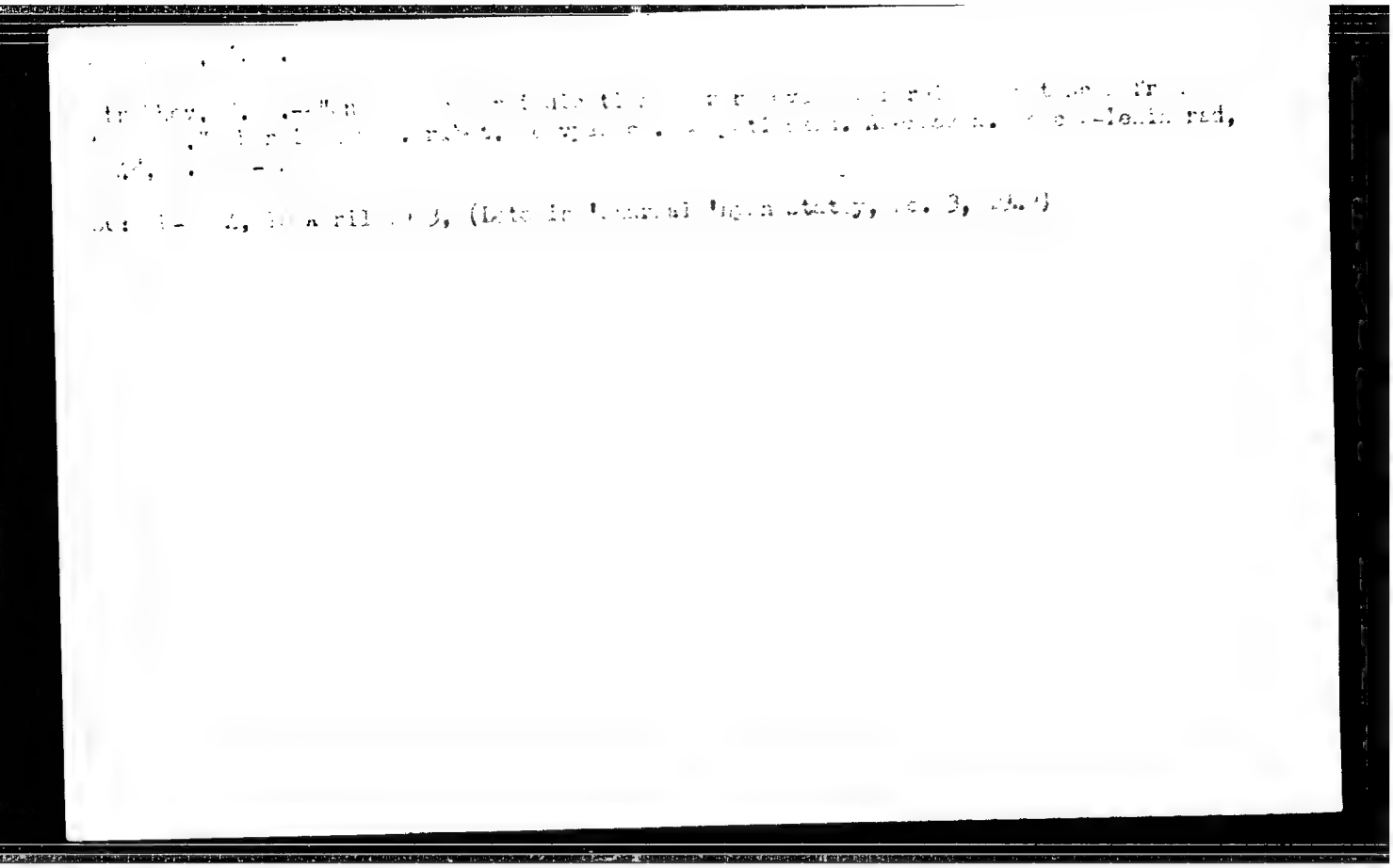

STRAKHOV, V.S.

Machining cone-shaped sealings used in machine parts. Mashinostroitel' no.1:33-34 Ja '57. (MLRA 10:4)
(Machine-shop practice)

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Attachments used for turning geometrically precise spheres on lathes. Mashinostroitel' no.2:27 F '57. (MLRA 10:5)
(Lathes--Attachments)

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Attachment used in grinding plunger dogs. Mashinostroitel' no.6:36-37 Je '57. (MLRA 10:7)

(Grinding machines--Attachments)

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Attachments used for boring grooves. Mashinostroitel' no.7:42 Jl '57.
(Lathes--Attachments) (MLRA 10:8)